I. Work
A. Sample Problems:
1. \( F = 200 \) Newtons \\
\( d = 50 \) meters \\
\( W = ? \) \\
Answer with unit of measure:

2. \( F = 5 \) Newtons \\
\( W = 75 \) Joules \\
\( D = ? \) \\
Answer with unit of measure:

3. \( W = 125 \) Joules \\
\( d = 10 \) meters \\
\( F = ? \) \\
Answer with unit of measure:

4. If 150 Joules of work is needed to move a box 10 meters, what force was used?

B. Fill-in-the-blank:
1. ___________________ is done when an object moves through a distance because of a __________________ acting upon the object.
2. When calculating work, you should use the formula: work = force \( \times \) ____________________.
3. The SI unit for work is the _______________________. It is represented by the letter ______.

C. Work Problems:
4. \( F = 90 \) N \\
\( d = 5 \) m \\
\( W = ? \) \\
5. \( F = 6 \) N \\
\( W = 72 \) J \\
\( d = ? \) \\
6. \( W = 120 \) J \\
\( d = 24 \) m \\
\( F = ? \)

7. \( W = ? \) \\
\( F = 62.6 \) N \\
\( d = 13 \) m \\
\( d = ? \) \\
8. \( W = 13.2 \) J \\
\( F = 2 \) N \\
\( d = 27.2 \) m \\
\( d = ? \) \\
9. \( W = 136 \) J \\
\( F = ? \) \\
\( F = ? \)

10. If 360 Joules of work are needed to move a crate a distance of 4 meters, what is the weight of the crate?

11. If a group of workers can apply a force of 1000 Newtons to move a crate 20 meters, what amount of work will they have accomplished?

12. If 68 Joules of work were necessary to move a 4 Newton crate, how far was the crate moved?

13. How much work is done in holding a 15 N sack of potatoes while waiting in line at the grocery store for 3 minutes.

II. Power
A. Sample Problems:
1. \( W = 500 \) Joules \\
\( t = 25 \) seconds \\
\( P = ? \) \\
Answer with unit of measure:

2. \( P = 25 \) watts \\
\( W = 5000 \) Joules \\
\( t = ? \) \\
Answer with unit of measure:

3. \( P = 170 \) watts \\
\( t = 20 \) seconds \\
\( W = ? \) \\
Answer with unit of measure:

4. If a man moves a large box that weighs 10 Newtons 20 meters in 30 seconds, how much power was used?

B. Fill-in-the-blank:
1. _________________________________ is the rate at which work is done.
2. When calculating power, you should use the formula P = __________________________ divided by _________________. In this formula, “P” stands for power, ____ stands for work, and _____ for time.
3. The SI unit for Power is the ______________________.

C. Power Problems:
4. \( W = 100 \) J \\
\( t = 10 \) s \\
\( P = ? \) \\
5. \( W = 225 \) J \\
\( P = 25 \) W \\
\( t = 15 \) s \\
6. \( P = 20 \) W \\
\( t = ? \) \\
\( W = ? \)

7. \( W = 500 \) J \\
\( t = 2.5 \) s \\
\( P = ? \) \\
8. \( W = 336 \) J \\
\( P = 14 \) W \\
\( t = ? \) \\
9. \( W = ? \) \\
\( t = 16.6 \) s \\
\( P = 64 \) W

10. A person weighing 600 N gets on an elevator. The elevator lifts the person 6 m in 10 seconds. How much power was used?

11. How much time is needed to produce 720 Joules of work if 90 watts of power is used?

12. If 68 W of power is produced in 18 seconds, how much work is done?

13. A set of pulleys lifts an 800 N crate 4 meters in 7 seconds. What power was used?